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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,952	03/25/2004	Nelson Diaz	16274.179	6355
22913	7590	08/27/2007		
WORKMAN NYDEGGER 60 EAST SOUTH TEMPLE 1000 EAGLE GATE TOWER SALT LAKE CITY, UT 84111			EXAMINER VAN ROY, TOD THOMAS	
			ART UNIT 2828	PAPER NUMBER
			MAIL DATE 08/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/808,952

Applicant(s)

DIAZ, NELSON

Examiner

Tod T. Van Roy

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-14 and 22-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-14 and 22-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/05/2007 has been entered.

Specification

The disclosure is accepted.

Response to Amendment

The Examiner acknowledges the amending of claims 9 and 22.

Response to Arguments

Applicant's arguments with respect to claims 9 and 22 have been considered but are moot in view of the new ground(s) of rejection.

The Examiner agrees that Riazat teaches motivation for differential driving, but not a specific configuration. The current action is being made non-final in order to add evidence to the configuration being known in the art.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 9-14 and 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diaz in view of Riazat et al. (US 2003/0138008) and Tatehara et al. (US 2003/0086456).

With respect to claim 9, Diaz teaches a laser driver comprising: a PNP transistor current source (fig.13a upper left, also a current mirror), an inductor coupled to the PNP transistor current source (fig.13a #809), and a first side of the laser diode; a switch coupled to the inductor (fig.13a #838, NPN); and a current sink coupled to the switch (fig.13a #834), wherein the PNP transistor current source supplies a first current to a laser if the switch is closed and a second current to the laser if the switch is open (as this circuit is the same as the claim limitations, and fig.4 of the applicant's specification, it is inherent that the operation would be the same) and wherein the PNP transistor current source, inductor, switch, and current sink are on a single semiconductor chip ([0030], stating the laser driver may be implemented on a single chip); including a second transistor (NPN) switch (fig.13a #830). Diaz does not teach an additional PNP

current source and inductor to be coupled to the second switch on the second side of the laser diode, or the laser diode to be driven differentially. Tatehara teaches using different driving arms on either side of the laser diode (fig.1) for differential driving. Riazat teaches a laser driver which uses a differentially driven laser diode ([0005]). It would have been obvious to one of ordinary skill in the art at the time of the invention to couple an additional identical PNP current mirror and inductor of Diaz (obvious to duplicate existing parts, see MPEP – 2144.04 VI B – duplication of parts) to the second switch to form the second, identical, transistor driving arm to allow for differential driving of the laser diode (a well known configuration taught by Tatehara, also see Riazat [0005]) allowing for reduction of parasitics when used in conjunction with transistor outline packaging (Riazat, [0005]).

References noted, but not relied upon, to teach the well known differential driving by two driving arms on either side of the laser diode are: 2005/00225201, 2004/0114650, 2003/0043869, 2002/0176462, 7054344, 6931040, and 5115147.

Claim 10 is rejected for the same reasons as claim 9 above.

With respect to claim 11, Diaz further teaches the switch to open and close in response to a data signal (fig.13a through input #832, also inherent that a switch would open and close in response to a data signal).

With respect to claim 12, Diaz further teaches that when the switch is closed to drive the laser to output a logic low (only bias applied, logic low) optical signal and the switch is opened to drive the laser to output logic high (both currents applied, logic high).

With respect to claims 13, Diaz further teaches the inductor size influences the frequency response of the PNP current source, and reduces intersymbol interference ([0088-90], also inherent as the circuit and inductor placement are the same as the instant invention).

Claim 14 is rejected for the same reasons as claim 9 above.

With respect to claims 22-28, Diaz, Tatehara and Riazat teach the laser driver as outlined in the rejection to claim 9, and Diaz further teaches the method of operating the laser driver as in the rejection to claims 15-21, which after the addition of the second PNP current mirror and inductor (with similar operation), would read on claims 22-28.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Examiner makes note of 2003/0002551 that teaches a driving configuration in fig.6 that closely resembles that claimed in current claim 1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tod T. Van Roy whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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